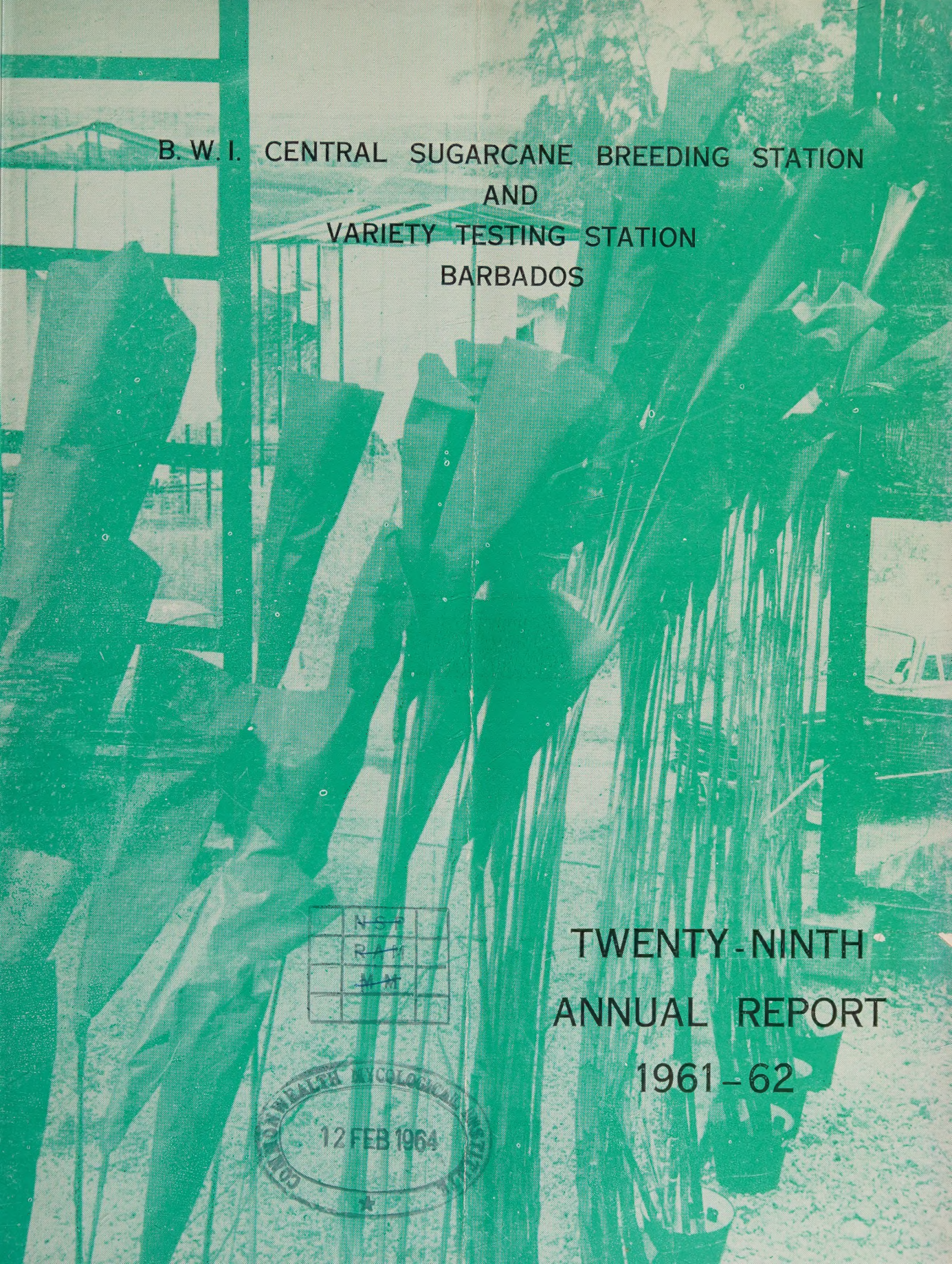

B. W. I. CENTRAL SUGARCANE BREEDING STATION AND VARIETY TESTING STATION BARBADOS

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COMMONWEALTH MYCOLOGICAL INSTITUTE
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TWENTY-NINTH ANNUAL REPORT 1961–62

B. W. I. CENTRAL SUGARCANE BREEDING STATION

AND

VARIETY TESTING STATION

BARBADOS

Twenty-Ninth Annual Report

for the year ending 30th September, 1962

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B.W.I. CENTRAL SUGAR CANE BREEDING STATION GROVES, ST. GEORGE

TECHNICAL COMMITTEE

Sir John Saint, C.M.G., O.B.E.	Edgehill House, St. Thomas, Barbados, *Chairman*.
Mr. A. DeK. Frampton, C.M.G.	*Chief Agricultural Officer, Ministry of Agriculture, Barbados*.
Dr. H. Evans, O.B.E. ...	*Director of Research, Bookers Sugar Estates, British Guiana*.
Mr. T. O. Ellis	*Director of Agricultural Research, Central Romana Corporation, La Romana, Dominican Republic*.
Mr. R. F. Innes	*Director of Research, The Sugar Manufacturers' Association (of Jamaica) Ltd., Jamaica*.
Dr. A. J. Vlitos	*Director of Research, Tate & Lyle Central Agricultural Research Station, Trinidad*.
Sir Robert Kirkwood (*Director, B.W.I. Sugar Association (Inc.)*)	*The Sugar Manufacturers' Association (of Jamaica) Ltd., Jamaica*.
Mr. G. T. Warren, O.B E. (*Director, B.W.I. Sugar Association (Inc.)*)	*St. Kitts (Basseterre) Sugar Factory, Ltd., St. Kitts*.
Mr. R. Norris, M.B.E. ...	*B.W.I. Sugar Association (Inc.), Barbados, Secretary*.

STAFF

Senior Geneticist	G. C. Stevenson, B.A., A.I.C.T.A.
Geneticist	D. I. T. Walker, M.Sc.
Agricultural Assistants	N. L. Foster
	A. N. C. Hewitt.
Technical Assistant	Vacant.
Secretary	Miss S. O. Maxwell.

BARBADOS SUAR CANE VARIETY TESTING STATION, CODRINGTON, ST. MICHAEL

STAFF

Botanist	B. DeL. Inniss, B.Sc., A.I.C.T.A.
Agricultural Assistant	C. D. Gilkes.
Statistical Clerk	E. L. Jones.

Cover Photograph

Maturing female arrows individually papered, standing in Hawaiian solution. Breeding lanterns in background.

Introduction

General:

The breeding programme of 1961 was a very successful one. The proportion of crosses carried out in the lantern batteries was materially increased, and the organisation of collecting breeding arrows on a large scale, setting up the crosses, preparation and routine changing of the preservative solution, ripening the arrows and preparing the fuzz for shipment to contributors was fully tested. The germinations obtained were sufficiently encouraging to indicate that the old method of breeding with field lanterns might be discontinued in future. With this end in view, the field breeding programme in 1961 was made with only such lanterns as were serviceable, and without the usual expense on replacements.

Some interesting new crosses were made, including a nobilisation of the Borneo *spontaneum* "Moentai", which is a strong-growing form with attractive growth habit. In general the emphasis was on making crosses with the more recent seedlings rather than placing reliance on the older standard breeding canes, whose potentialities it is felt have been fairly well explored. Many crosses were made between the standard commercial varieties of Hawaii, Queensland, Mauritius, Florida and India and the best Barbados breeding canes. Interesting progenies were obtained from several of these crosses, providing some addition to the range of types for selection under Caribbean conditions.

While it was possible to continue the routine work, and to make progress with the inbreeding and other special projects already under way, arrangements for the equipment of the new Station at Groves precluded the undertaking of new investigational work. In the circumstances, it was with satisfaction that final arrangements were concluded for a full-scale breeding programme at the new location in the 1962 season.

Establishment of the new Station at Groves:

The Committee, under the chairmanship of Sir John Saint, which was appointed by the B.W.I. Sugar Association to consider the future of the B.W.I. Central Sugar Cane Breeding Station, and to submit concrete proposals, reported on the 27th July, 1960. Briefly, it was recommended that the Station, as then constituted, should be replaced by two independent Stations:—

(a) a Breeding Station, which would be financed entirely by the sugar industry; and

(b) a Barbados Variety Testing Station, which would derive part of its finance from Government sources.

Suitable arrangements should be made to divide the assets of the existing Station, and the new Cane Breeding Station should be located at Groves, where new office and laboratory premises should be built and additional land purchased for breeding plots and experimental work with seedling populations. The Committee's report included detailed recommendations with regard to the staff and finances of the two proposed Stations.

The proposals of the Committee were subsequently accepted in principle by the Directors of the B.W.I. Sugar Association, and by August 1961, architects' plans for the new office and laboratory, and also for the Senior Geneticist's house which had been recommended to be sited alongside, had been prepared, and more detailed estimates of capital and recurrent costs were available. Also the land necessary for buildings and for additional agricultural use had been surveyed and preliminary arrangements for purchase had been made.

Approval of the final estimates was soon obtained, and building at the new site was begun on the 15th December, 1961. Meanwhile, the old laboratory at Bridgetown could not be used from early 1962, when alternations were begun for its incorporation into the premises of the Ministry of Agriculture, Barbados. Good progress was made with the new office and laboratory block by the contractors, and it was ready for occupation in August 1962. The Station began operations from the new address on the 20th August, 1962.

The Ministry of Agriculture, Barbados, was consulted when the plans for the future of the Station were formulated, and an assurance was obtained that the land already belonging to the Station at Groves, which is used for cane breeding, and which for administrative convenience had been originally vested in the Government of Barbados, might continue to be so used without let or hindrance. Permission was also sought to place certain other facilities of the Station on lands of the Government which adjoin the Station's fields. It is wished to place on record here an appreciation of the courtesy of the Minister of Agriculture and his staff, and of their continued interest and co-operation in the new developments in the Station's activities.

Other preparations for operating the Station as a self-contained unit at Groves included the removal of the lantern-batteries from Codrington. Their erection at Groves allows of not only considerable saving in time and expense compared with the former procedure of carrying arrowing canes by lorry from Groves to Codrington, but also results in less handling, and therefore less breakage of the fragile arrows, and better survival of arrows due to the possibility of their being set up in the preservative solution immediately after cutting in the field. A large prefabricated iron building, imported in sections from England and measuring 50 ft. by 40 ft. was also erected to serve as a place where crossed arrows may ripen their fuzz after hybridisation in the lantern batteries, as well as a storage area for mechanical equipment. The roof was guttered and supplied with storage tanks for rainwater, which is used in large amounts for the breeding method now in use. The windward aspects of the open-sided building were protected with woven plastic material, so as to ensure a well ventilated interior free from high winds which are usual at Groves towards the end of the year.

Two fields, together about thirteen acres, were purchased from an adjoining plantation, to bring the Station's cane area up to approximately 32 acres, including an area of $4\frac{1}{2}$ acres on lease from an adjoining plantation and about 6 acres on indefinite loan from the Ministry of Agriculture. In formulating plans for working this area to the best advantage, it was borne in mind that cultivation would not be as straightforward as if it were a small commercial plantation. For experimental work, cultivation operations would often be required at short notice and outside the normal season. Consequently, it was deemed wise not to rely on cultivation equipment hired on contract, particularly as previous experience had shown that this was often not available when required. It was decided to recommend the purchase of a wheel tractor with power-take-off trailer and requisite cultivation attachments. These items would provide for carriage of cane to the factory and of heavy

requirements from Bridgetown, as well as removal of arrowing canes from the field to the lantern batteries. The Station's 5–ton lorry should be sold, and replaced by a station wagon, which would be more economical to operate and quite sufficient for day–to–day journeys and carrying small loads, etc.

Approval for the purchase of the above items of capital equipment, as well as certain other office and laboratory requirements, was obtained in October 1962, and the necessary orders were placed.

Under the new arrangements, the B.W.I. Central Sugar Cane Breeding Station is responsible for the assembling and cultivation of parent varieties, for the breeding work, and for research investigations directly related to it, such as improvements in the technique of breeding, and the development of breeding varieties and their evaluation as parents. Seedling propagation and testing to provide new varieties for Barbados are undertaken by the Variety Testing Station, which is independent of the Cane Breeding Station, and which is comparable with those undertaking the propagation and testing work in Jamaica and British Guiana. It is expected — and is indeed most desirable — that the geneticists will work in close co–operation with the staff of the Variety Testing Station in Barbados, and will continue to visit the Stations in Jamaica and British Guiana for consultations on the progress of the work and on variety requirements.

Staff:

Mr. B. deL. Inniss, Botanist, Mr. C. D. Gilkes, Field Assistant and Mr. E. L. Jones, Statistical Clerk, left the service of the old Cane Breeding Station on the 30th June, 1962, to form the initial staff of the new Variety Testing Station, with headquarters at Codrington, where the seedling nurseries are situated. All these officers had been many years in the service of the former Cane Breeding Station, and an appreciation of their work is registered here. They will continue to work in close co–operation with the new Cane Breeding Station's officers in many aspects of their investigations.

The Senior Geneticist was in Europe on vacation leave for three months, from early May until early August, 1962.

The Geneticist attended the Eleventh Congress of the International Society of Sugar Cane Technologists in Mauritius in September 1962, where he presented a paper. Afterwards, he visited Tanganyika, Kenya and Uganda for discussions concerning sugar cane varieties, and afterwards proceeded to the Sugar Cane Breeding Institute at Coimbatore in India, to the Cytology Laboratory of the Sugar Plants Division, U.S. Department of Agriculture at Beltsville near Washington, and to the U.S. Sugar cane Breeding Station at Canal Point in Florida. He also spent a few weeks' vacation leave in England *en route*.

Pub'ication:

WALKER, D.I.T. — "Family Performance at Early Selection Stages as a Guide to the Breeding Programme". Proc. 11th Congress I.S.S.C.T. In the press.

Sugar Cane Breeding — Seedling Raising and Preliminary Eliminations

(a) Breeding Programme:

The weather at Groves Station was exceptionally dry up to the end of July, and the irrigation equipment was fully employed after a damaged power line had been repaired and mains electricity installed. Arrowing was satisfactory and a good programme completed. One hundred and fourteen crosses were made at Groves as well as seventeen selfs for the inbreeding programme. A further one hundred and thirty-nine crosses were made in solution with arrows transported to Codrington. All seed, except that of crosses intended for breeding only, was divided equally between Barbados, Jamaica, British Guiana and Central Romana (Dominican Republic.)

(b) Seedling Raising, Potting and Planting in the Field Nursery:

Germination of the seed from Groves was somewhat disappointing. The crosses made at Codrington gave poor germination at first, but later crosses were excellent, which we believe was the result of greater attention to details of pollination, in particular the arrangement of the male and female arrows in the lantern, and the vigourous shaking of the arrows two or three times a day.

It is estimated that over 54,000 seedlings germinated, of which nearly 41,000 were potted as singles and over 39,000 were planted in the nursery, with some 1,200 bunches.

It is reported that 23,227 seedlings germinated from the fuzz sent to Jamaica, 29,277 in British Guiana and 28,700 at Romana, making a total of 135,750 seedlings produced by the station for the year.

Table I gives, under group heads, a list of the number of crosses made, the number of seedlings germinated and the numbers planted in the nursery field, while Appendix I gives detailed information for each cross. The figures for seedlings planted in the field have been corrected for any deaths after field planting, though establishment of the nursery was on the whole good. Commercial seedlings were planted at Codrington as usual. Families for breeding were planted into a similar nursery at Groves.

(c) Planting the First Year Trial — B.63′ Series:

The seedlings of this series were bred in 1960 and planted in the field nursery in May 1961. In October 1961, the seedlings in this nursery were selected on appearance and about 18% replanted into the First Year Trial. As in recent years, the standard variety, B.41211, was planted every fifth stool in both directions. Table II summarises, and Appendix II gives details of this selection. Again the nursery figures have been corrected by deducting the numbers of seedlings which failed to establish, which were rather high in the 1961 nursery.

TABLE I.

SUMMARY OF BREEDING PROGRAMME, 1961

GROUP	No. of Crosses	No. Germinated	No. PLANTED IN NURSERY	
			Singles	Bunches
S. officinarum x S. spontaneum	13	3,204	2,165	115
S. officinarum x S. barberi	2	72	67	—
S. officinarum x S. spontaneum x S. barberi ...	93	28,106	20,473	547
S. officinarum x S. spontaneum x S. sinense ...	3	585	548	—
S. officinarum x S. barberi x S. sinense ...	1	11	9	—
S. officinarum x S. spontaneum x S. barberi x S. sinense	46	11,611	8,404	269
S. officinarum x S. robustum	1	1,500	377	96
S. officinarum x S. spontaneum x S. robustum...	3	154	128	8
S. officinarum x S. spontaneum x S. barberi x S. robustum	9	2,676	2,475	—
S. officinarum x S. spontaneum x S. barberi x S. sinense x S. robustum	1	80	56	—
S. officinarum x S. spontaneum x S. sinense x S. robustum	2	789	724	—
S. officinarum x S. spontaneum x S. barberi x S. sinense x S. robustum	1	223	215	—
TOTALS	174	49,011	35,641	1,035
Selfs and Sibs in Research Programme ...	14	5,532	2,746	230
GRAND TOTALS	188	54,543	38,387	1,265

TABLE II.

SUMMARY OF NURSERY SELECTION, OCTOBER 1961

GROUP	No. of Crosses	No. PLANTED IN NURSERY		No. Planted in First Year Trial
		Singles	Bunches	
S. officinarum x S. spontaneum	8	1,272	27	316
S. officinarum x S. spontaneum x S. barberi ...	101	25,100	497	5,155
S. officinarum x S. spontaneum x S. sinense ...	2	217	—	58
S. officinarum x S. spontaneum x S. barberi x S. sinense	27	6,168	80	1,530
S. officinarum x S. spontaneum x S. robustum	2	337	—	51
S. officinarum x S. spontaneum x S. barberi x S. robustum	8	425	135	148
S. officinarum x S. spontaneum x S. barberi x S. sinense x S. robustum	3	123	298	72
Open pollinated	5	—	103	73
TOTALS	157	33,642	1,140	7,403

(d) Reaping the First Year Trial — B.62′ Series:

The varieties of this series were bred in 1959—60, and planted into the First Year Trial in October 1960. The trial was reaped in February 1962, and the usual records of cane number, weight and refractometer brix taken from all stools of reasonable appearance.

In this series, 380 final selections were made given B numbers, and planted into propagation plots, as detailed cross-by-cross in Appendix III. B.41211 planted every fifth stool throughout the trial gave the following average results:—

Canes per stool	mean 11.6	range	2 — 23
lb. per Stool	mean 32.3	range	2 — 85
Brix	mean 19.8	range	18.7 — 23.0

Selected varieties contained 10 to 40 canes and weighed from 28 to 107 lbs. The lowest accepted brix was 18.4.

A portion of the original nursery of this series was ratooned and new selections made from it in February 1962. These selections will be treated as usual for commercial screening and will be compared with the varieties selected from the same families by the normal routine, in propagation plots and Second Year Trials. Details are embodied in Appendix III.

(e) Planting the Second Year Trials — B.61′ Series:

The 360 varieties of B.61′ series were multiplied in ten-stool plots at Codrington from February — October 1961, when a further selection, correcting some of the mistakes of the single stool selection in February, reduced this number to 229 varieties. These were planted in Second Year Trials under low rainfall conditions (Fairy Valley or Husbands, St. Lucy) and high rainfall conditions (Cliff or Hothersal).

(f) Reaping Second Year Trials — B.60′ Series:

The 168 selections of the B.60′ series were cut in duplicate Second Year Trials, high and low rainfall. Eighteen varieties were selected for further consideration, of which 16 will be advanced in Trials in Barbados. Selection at Colleton estate was made difficult by a very severe attack of moth borer. Severe drought at Crab Hill had practically killed a number of varieties. The performances of standard and selected varieties are shown in Tables III and IV.

TABLE III

SECOND YEAR TRIALS — B.60′ SERIES — PLANT CANES

Low Rainfall Trial (L) ca 44″ — CRAB HILL — Cut 21st, 22nd & 26th Feb.1962

High Rainfall Trial (H) ca 61″ — KENDAL — Cut 9th, 12th, & 13th March 1962

VARIETY	PARENTAGE	NO. OF CANES PER STOOL (ROTTEN)		ARROWING		H.R. BRIX		TONS CANE PER ACRE	
		L	H	L	H	L	H	L	H
B.37161	Standard	10.3 (1.2)	—	3	—	21.2	—	17.08	—
B.41211	Standard	12.1 (0.7)	—	0	—	21.4	—	16.82	—
B.45151	Standard	—	21.0 (0.8)	—	0	—	22.5	—	48.5
B.4744	Standard	—	15.8 (0.6)	—	0	—	22.0	—	43.1
B.6015	B.3439 x B.45151	127 (sli)	127 (mod)	nil	mod.	105	100	154	108
B.6017	„ x „	90 (ser)	89 (sli)	nil	mod.	104	101	106	88
B.6027	B.3439 x B.5301	86 (mod.)	101 (sli)	nil	light	99	96	77	101
B.6072	B.39254 x B.41211	104 (sli.)	136 (sli.)	nil.	mod.	101	104	76	101
B.6076	B.40105 x B.41227	107 (mod.)	95 (sli.)	nil.	heavy	103	98	92	89
B.6088	B.4214 x B.4744	91 (mod.)	97 (sli.)	nil.	light	100	100	98	115
B.60115	B.45119 x B.47258	82 (bad)	110 (mod.)	nil	light	104	100	74	107
B.60116	„ x „	121 (mod.)	120 (mod.)	nil	light	103	106	114	116
B.60125	B.47155 x B.49119	160 (sli.)	135 (sli.)	nil	light	97	97	135	126
B.60145	B.50184 x B.49119	197 (sli.)	129 (bad)	light	heavy	104	96	152	109
B.60155	B.5401 x B.4098	133 (bad)	107 (sli.)	nil	light	98	97	116	112
B.60162	Co. 421 x B.4098	167 (mod.	95 (mod.)	nil	heavy	99	98	168	103
B.60163	„ x „	184 (mod.)	82 (mod.)	nil	mod.	99	97	192	100

Notes:— Performances of the standards are given as the averages of all groups involved. Those of the seedlings are expressed as a percentage of the standards, B.41211 (L) and B.4744 (H) in their own groups. Rotten canes and arrowing are not closely compared with the standards, but are grouped as follows:—

ROTTEN CANES:— Nil; 1—4% slight; 5—10% moderate; 11—20% bad; over 20% serious.

ARROWING:— Nil; 1—10% light; 11—25% moderate; over 25% heavy.

The rainfalls quoted are those received by the crops for the 16-month growing period.

TABLE IV

SECOND YEAR TRIALS — B.60′ SERIES — PLANT CANES

Low Rainfall Trial (L) ca. 50″ — MANGROVE — Cut 1st — 3rd March, 1962

High Rainfall Trial (H) ca. 58″ — COLLETON — Cut 6th — 8th March, 1962

VARIETY	PARENTAGE	NO. OF CANES PER STOOL (ROTTEN)		ARROWING		H.R. BRIX		TONS CANE PER ACRE	
		L	H	L	H	L	H	L	H
B.37161	Standard	15.3 (0.5)	—	1	—	21.9	—	37.2	—
B.41211	Standard	18.0 (0.3)	—	0	—	21.9	—	34.6	—
B.45151	Standard	—	23.1 (1.2)	—	0	—	21.4	—	49.7
B.4744	Standard	—	21.1 (1.6)	—	1	—	21.5	—	45.9
B.60181	F.36–819 x B.41211	101 (sli.)	54 (ser)	light	mod.	101	97	116	80
B.60191	H.32–8560 x B.41211	96 (sli.)	73 (mod.)	light	heavy	115	100	99	83
B.60267	B.4145 x B.45151	93 (sli.)	102 (sli.)	nil	light	106	104	119	113
B.60321	H.32–8560 x B.49119	102 (sli.)	85 (mod.)	nil	light	106	99	115	105
B.60348	B.48330 x B.49119	124 (sli.)	99 (bad)	light	mod.	102	87	128	73

See notes below TABLE III

(g) Seedlings of the B.59′ Series — Second Year Seedling Trials — First Ratoons:

The seedlings of this series were cut as First Ratoons in Second Year Trials at the low rainfall estates, Bushy Park and Bromefield, and in duplicate trials at the high rainfall estates, Guinea and Castle. Twenty-four varieties were selected, of which 14 will be tested further in Barbados. Details are given in Table V.

TABLE V

SECOND YEAR TRIALS — B.59′ SERIES — FIRST RATOONS

Low Rainfall Trial (L) ca. 42″ — BUSHY PARK — Cut 27th & 28th February 1962

High Rainfall Trial (H) ca 44″ — CASTLE — Cut 3rd March & 2nd April 1962

Low Rainfall Trial (L) ca 42″ — BROMEFIELD — Cut 21st & 22nd March, 1962

High Rainfall Trial (H) ca 52″ — GUINEA — Cut 4th & 7th May, 1962

VARIETY	PARENTAGE	NO. OF CANES PER STOOL (ROTTEN)		ARROWING		H.R. BRIX		TONS CANE PER ACRE	
		L	H	L	H	L	H	L	H
B.37161	Standard	11.6 (0.5)	—	0	—	21.9	—	30.0	—
B.41211	Standard	13.8 (0.5)	—	0	—	21.4	—	31.7	—
B.45151	Standard	17.6 (0.6)	20.2 (0.8)	0	0	22.6	23.1	27.6	41.4
B.4744	Standard	12.8 (0.5)	14.0 (0.6)	0	1%	21.3	22.6	23.5	36.9
B.5923	B.3365 x B.49119	92 (sli.)	137 (mod.)	light	light	103	89	89	108
B.5928	,, x ,,	158 (sli.)	167 (sli.)	nil	light	109	95	112	104
B.5937*	B.34102 x B.45151	76 (sli.)	125 (sli.)	nil	light	116	105	66	120
B.5944	B.35207 x B.53218	90 (sli.)	108 (mod.)	light	light	98	94	101	100
B.5969	B.37161 x B.51242	115 (sli.)	103 (mod.)	nil	mod.	103	96	101	108
B.5970	,, x ,,	117 (sli.)	109 (mod.)	nil	nil	100	94	103	129
B.5976	B.37161 x POJ.2878	106 (sli.)	103 (mod.)	nil	sli.	109	99	105	82
B.5984*	B.39254 x B.50377	144 (sli.)	114 (mod.)	mod.	heavy	112	102	111	75
B.5992	B.4145 x NCo.310	140 (sli.)	96 (mod.)	light	heavy	114	101	124	76
B.59104	B.42279 x B.41211	93 (mod.)	80 (bad)	light	mod.	98	95	94	#69
B.59117	B.4362 x B.4098	126 (sli.)	113 (mod.)	nil	nil	106	101	97	93
B.59136	B.43358 x B.51353	122 (mod.)	129 (nil.)	nil	nil	98	94	102	107
B.59137	,, x ,,	112 (mod.)	117 (sli.)	nil	nil	97	98	94	119
B.59159	B.45170 x B.49119	142 (sli.)	161 (sli.)	nil	nil	109	113	129	135
B.59162	B.45154 x B.46364	102 (sli.)	124 (sli.)	nil	light	107	105	126	153
B.59176	B.5055 x B.45151	130 (mod.)	113 (sli.)	nil	mod.	109	103	111	86
B.59184*	B.51311 x B.4744	—	109 (sli.)	—	nil	—	105	—	107
B.59189	B.51311 x B.49119	141 (sli.)	136 (sli.)	nil	nil	95	102	158	149
B.59211*	Co.413 x B.49119	161 (sli.)	150 (sli.)	nil	nil	108	99	140	117
B.59215	Co.421 x B.4995	206 (sli.)	173 (sli.)	nil	nil	100	98	162	134
B.59233	POJ.2878 x B.41227	dead	180 (sli.)	dead	nil	dead	105	dead	150
B.59241	M.134/32 x B.41227	75 (sli.)	94 (sli.)	nil	nil	97	105	86	86
B.59243	Trojan x B.4098	63 (sli).	88 (sli.)	nil	nil	98	95	86	114
B.59248	,, x ,,	114 (sli.)	155 (sli.)	nil	nil	101	104	103	131

*Selected for breeding plots #Recommended to be discarded

See also notes below TABLE III

Variety Testing

a) Third Year Seedling Trials:

These trials are intended to screen the selections of each series more extensively, so that any which come up to the performance of the standard varieties may be considered for final testing in Select Seedling Trials and in commercial cultivation in Barbados. In the past, these trials have all been laid out in the form of six randomised blocks, with a plot size of 20 cane holes or approximately 1/87th of an acre. For this series, it was decided to experiment with a larger plot size and to remove a guard row round each plot, so that yields may approximate those which can be expected from commercial planting and so make selection for yield of cane more efficient. Accordingly, half of the trials were designed in three randomised blocks with a plot size of 56 cane holes, from which a guard row could be removed, leaving an effective plot size of 30 cane holes. The three trials so treated were at Spencers, Castle and Applewhaites. Sample bundles, for sucrose in juice determinations, are normally taken from two blocks of the six; in the new trials they are taken from all blocks.

(i) Plant Cane Trials — B. 58′ Series: (Table VI)

The most outstanding variety of this series was B.58230. It outyielded the standard varieties in five of the six trials, and was exceptionally sound, even when the trials were cut very late in the crop season. The juice quality was variable, but was poorer than those of B.45151 and B.4744. However, it was considerably better than that of B.41211 and had a higher purity.

B.5809 was outstanding at Applewhaites, but the juice quality was defintely poor. B.58114 and B.58165 gave good yields of cane, but the juices were not outstanding.

(ii) First Ratoons — B.57′ Series: (Table VII)

The outstanding variety in this series is B.57150. It has ratooned exceptionally well, and has an excellent juice. It appears to be the best suited to the low and intermediate rainfall areas, and the valley soils, where arrowing is not a limiting factor.

B.5736 performed quite well, and appears to be best suited to the intermediate and high rainfall areas. It also has quite a good juice.

B.5791 performed well as a first ratoon, and is a thick, clean cane with an upright habit, which would allow it to be cut mechanically. It has a reasonably good juice. The second ratoons of these trials will be recorded before deciding on final testing of any of these varieties.

TABLE VI

THIRD YEAR TRIALS — B.58′ SERIES — PLANT CANES

Estate ...	Spencers	Yorkshire	Alleynedale	Buttals	Castle	Apple-Whaites
Reaping date (1962 ...	23rd Mar.	26th Apr.	14th Mar.	12th Apr.	24th Apr.	10th Apr.
Rainfall ...	ca 52″	ca 52″	ca 60″	ca 63″	ca 57″	ca 75″
Plot Size (stools)	56 (30)	20	56 (30)	20	56 (30)	20

TONS CANE PER ACRE (ROTTEN CANES PER PLOT)

B.41211 ...	34.5 (24)	26.8 (79)	—	—	—	—
B.45151 ...	35.3 (24)	40.7 (17)	41.8 (22)	34.1 (71)	34.6 (27)	45.2 (37)
B.4744 ...	—	—	33.1 (57)	34.9 (38)	33.2 (18)	46.3 (19)
B.5802 ...	33.6 (35)	31.3 (31)	32.4 (20)	29.7 (42)	28.4 (31)	30.4 (31)
B.5809 ...	36.0 (33)	38.4 (22)	38.4 (22)	32.4 (47)	29.1 (16)	46.8 (19)
B.5863 ...	28.2 (41)	34.4 (43)	39.1 (14)	39.0 (31)	27.7 (56)	33.6 (27)
B.5891 ...	30.1 (45)	28.1 (77)	30.4 (55)	36.6 (33)	29.1 (58)	39.8 (49)
B.58109 ...	27.5 (53)	29.0 (58)	35.1 (32)	31.1 (44)	20.5 (48)	37.3 (42)
B.58114 ...	29.8 (25)	38.3 (33)	40.3 (16)	32.5 (30)	30.7 (34)	38.0 (20)
B.58137 ...	26.7 (39)	28.6 (25)	30.1 (17)	31.2 (34)	27.9 (30)	36.2 (38)
B.58141 ...	29.3 (44)	34.1 (30)	35.6 (14)	31.4 (33)	29.5 (37)	41.3 (24)
B.58143 ...	28.3 (20)	37.2 (15)	35.6 (6)	39.6 (16)	33.4 (17)	40.9 (12)
B.58150 ...	34.9 (26)	34.0 (37)	27.3 (57)	35.6 (48)	34.0 (35)	39.5 (39)
B.58165 ...	36.3 (25)	36.9 (34)	38.1 (11)	31.9 (30)	24.2 (19)	42.8 (22)
B.58166 ...	28.8 (24)	35.6 (31)	35.4 (26)	35.4 (36)	29.4 (36)	31.3 (27)
B.58176 ...	31.4 (28)	33.9 (50)	39.3 (36)	40.4 (35)	32.3 (25)	37.7 (31)
B.58230 ...	38.0 (11)	43.6 (23)	43.6 (5)	45.2 (13)	36.9 (13)	39.4 (14)
LSD(P=0.05)	±5.8	±4.5	±4.4	±4.2	±5.6	±3.3

SUCROSE IN JUICE (PURITY))

B.41211 ...	18.0 (84)	19.5 (86)	—	—	—	—
B.45151 ...	19.9 (88)	21.7 (90)	16.8 (81)	19.7 (88)	20.7 (89)	18.3 (87)
B.4744 ...	—	—	20.0 (89)	19.7 (88)	18.7 (86)	17.8 (84)
B.5802 ...	17.9 (87)	20.3 (89)	17.1 (85)	18.3 (86)	18.1 (86)	14.8 (77)
B.5809 ...	17.2 (84)	18.7 (84)	17.8 (86)	17.6 (84)	17.6 (83)	18.5 (89)
B.5863 ...	16.8 (83)	18.0 (85)	15.7 (78)	17.6 (85)	17.1 (81)	17.3 (83)
B.5891 ...	18.6 (88)	19.3 (87)	19.3 (88)	19.3 (88)	19.4 (87)	18.1 (87)
B.58109 ...	19.3 (88)	19.9 (89)	18.2 (88)	19.7 (88)	20.3 (88)	16.9 (84)
B.58114 ...	19.0 (87)	20.7 (88)	16.8 (83)	18.2 (86)	19.1 (85)	16.2 (81)
B.58137 ...	18.6 (86)	20.0 (88)	19.3 (90)	17.9 (82)	17.9 (82)	18.6 (87)
B.58141 ...	18.8 (86)	19.4 (87)	17.6 (84)	18.2 (86)	19.0 (86)	18.6 (86)
B.58143 ...	18.9 (87)	19.9 (87)	18.7 (86)	19.2 (87)	19.5 (86)	17.9 (84)
B.58150 ...	18.1 (88)	19.7 (88)	17.3 (84)	19.5 (89)	19.0 (87)	17.4 (87)
B.58165 ...	18.0 (85)	18.9 (86)	17.9 (86)	17.7 (83)	17.7 (84)	17.7 (84)
B.58166 ...	17.3 (85)	17.9 (86)	17.1 (86)	17.0 (83)	17.0 (82)	16.0 (82)
B.58176 ...	19.2(89)	20.0 (87)	17.6 (83)	18.2 (84)	19.3 (87)	17.6 (86)
B.58230 ...	18.3 (86)	18.2 (84)	17.5 (89)	19.4 (86)	18.4 (85)	17.7 (83)

TABLE VII

INTERESTING VARIETIES AS FIRST RATOONS, THIRD YEAR TRIALS, B.57′ SERIES

Estate ... *Reaped* *Rainfall*	**Hope** 19th Mar. ca 49″	**Coverley** * 28th Mar. ca 48″	**Bulkeley** 23rd May ca 57″	**Portland** 3rd Apr. ca 47″	**Guinea** 4th Apr. ca 50″
	TONS CANE PER ACRE (AVAILABLE SUCROSE IN JUICE)				
B.37161 ...	25.2 (15.6)	14.4 (17.1)	—	—	—
B.41211 ...	32.2 (14.1)	20.3 (15.7)	—	—	—
B.41227 ...	31.1 (18.7)	22.3 (18.9)	38.6 (18.9)	—	36.0 (19.2)
B.45151 ...	—	—	40.5 (20.7)	33.7 (19.4)	41.3 (20.4)
B.4744 ...	26.9 (16.1)	—	37.6 (19.7)	28.8 (18.4)	37.8 (18.1)
B.5736 ...	30.6 (16.6)	18.0 (17.8)	36.0 (20.3)	—	40.3 (18.5)
B.5787. ...	33.6 (16.1)	20.4 (16.9)	39.3 (17.7)	31.4 (19.3)	39.5 (18.0)
B.5791 ...	31.5 (17.2)	19.3 (18.3)	37.7 (20.3)	—	40.1 (18.0)
B.57150 ...	33.2 (17.7)	24.4 (18.9)	40.9 (20.8)	37.0 (19.4)	42.8 (19.4)

* This trial was very heavily supplied, but this has been allowed for in calculating tonnage.

(b) Select Seedling Trials:

These trials are laid out in the form of 4 x 4 or 5 x 5 latin squares with an effective plot size of approximately 1/40th of an acre within guard rows.

(i) Plant Canes:

In the plant cane trials, the varieties B.52107, B.5401, B.5480, B.54142 and B.54277 were compared with the standard varieties, B.41211, B.41227, B.45151, B.4744 and B.49119. A summary of these trials is given in Table VIII.

TABLE VIII

SELECT SEEDLING TRIALS — PLANT CANES

Plantation	Hope	Searles	Bakers	Lamberts	Boarded Hall	Hopewell	Wakefield
Reaping Date ...	20th Mar.	27th Mar.	16th Mar.	29th Mar.	16th Apr.	9th Apr.	6th Apr.
Rainfall ...	ca 58″	ca 57″	ca 54″	ca 58″	ca 70″	ca 75″	ca 69″
TONS CANE PER ACRE							
B.41211	20.32	—	26.74	36.64	—	—	—
B.41227	—	—	—	—	39.98	—	—
B.45151	—	—	—	—	—	36.34	37.04
B.4744	—	40.47	—	—	39.56	—	42.25
B.49119	31.41	38.62	35.84	—	—	—	—
B.52107	—	—	—	44.93	41.68	37.07	—
B.5401	23.51	—	32.13	32.30	—	—	—
B.5480	—	—	—	—	—	38.31	38.52
B.54142	—	39.73	31.01	34.99	42.69	37.23	41.77
B.54163	27.87	38.84	—	—	—	—	—
B.54277	30.45	39.19	34.65	39.02	43.44	32.88	32.68
TONS SUGAR PER ACRE							
B.41211	2.61	—	3.24	4.41	—	—	—
B.41227	—	—	—	—	5.47	—	—
B.45151	—	—	—	—	—	4.87	4.97
B.4744	—	4.94	—	—	5.31	—	5.24
B.49119	3.94	4.51	3.90	—	—	—	—
B.52107	—	—	—	5.91	5.08	4.50	—
B.5401	3.14	—	3.83	4.02	—	—	—
B.5480	—	—	—	—	—	4.69	4.86
B.54142	—	4.89	3.66	4.16	5.72	4.61	5.77
B.54163	3.80	5.04	—	—	—	—	—
B.54277	3.93	4.68	4.17	4.82	5.48	4.08	4.14
LSD (P=0.05)	±0.29	n.s.	± 0.50	± 0.62	n.s.	n.s.	± 0.52
PERCENT SUCROSE IN CANE (PURITY)							
B.41211	15.2 (85)	—	12.5 (78)	14.5 (83)	—	—	—
B.41227	—	—	—	—	15–4 (89)	—	—
B.45151	—	—	—	—	—	15.1 (89)	15.2 (89)
B.4744	—	13.9 (87)	—	—	15.3 (87)	—	14.2 (87)
B.49119	14.9 (84)	13.7 (85)	13.2 (83)	—	—	—	—
B.52107	—	—	—	15.3 (86)	14.4 (85)	14.2 (86)	—
B.5401	15.4 (87)	—	14.1(85)	14.6 (85)	—	—	—
B.5480	—	—	—	—	—	14.1(87)	14.5(87)
B.54142	—	14.1 (87)	13.5 (87)	14.1 (84)	15.1 (89)	14.2 (87)	15.4 (90)
B.54163	16.0 (85)	14.7 (88)	—	—	—	—	—
B.54277	14.9 (87)	14.2 (87)	14.0 (86)	14.6 (84)	14.6 (87)	14.2 (88)	14.5 (87)
NUMBER OF ROTTEN CANES PER PLOT							
B.41211	12	—	35	41	—	—	—
B.41227	—	—	—	—	59	—	—
B.45151	—	—	—	—	—	49	35
B.4744	—	30	—	—	59	—	23
B.49119	13	25	46	—	—	—	—
B.52107	—	—	—	14	58	28	—
B.5401	18	—	51	80	—	—	—
B.5480	—	—	—	—	—	23	35
B.54142	—	22	48	36	51	21	24
B.54163	12	24	—	—	—	—	—
B.54277	17	19	16	11	29	21	16

TABLE IX

CONSTANT — SELECT SEEDLING TRIAL
AVERAGE OF PLANT CANE AND FIRST RATOON CROPS
RAINFALLS CA 47 AND 55 INCHES RESPECTIVELY

	B. 45151	B.52107	B.5401	B.5480	B.54142	LSD (P=0.01)
Tons cane per acre ...	30.84	38.93	34.72	39.68	40.77	4.64 tons
Rotten canes per plot	178	43	55	40	29	—
% available sucrose in juice	20.22	18.92	20.51	19.57	19.26	0.71 %
% fibre in canes ...	14.4	13.2	15.5	14.3	15.3	0.6 %
Tons sugar per acre ...	4.15	5.08	4.56	5.19	5.10	0.61 tons

In the trial in the low rainfall area, B.49119 gave the heaviest yields of cane and sugar closely followed by B.54277. The latter variety is, however, a very indifferent germinator, without an Aretan pre–planting dip, and cannot be recommended for this reason. B.54163 also gave a good yield of sugar but cane yields were lower than those of B.49119 and B.54277.

In the trials in the intermediate rainfall areas, B.4744 gave the heaviest yield of cane at Searles, closely followed by B.54142, B.54277 and B.54163. However, B.54163 gave the heaviest yield of sugar followed closely by B.4744, B.54142 and B.54277.

At Bakers, on the red sands, B.49119 gave the heaviest yield of cane followed by B.54277, B.5401 and B.54142. B.54277 gave the heaviest yield of sugar, followed by B.49119, B.5401 and B.54142.

At Lamberts, B.52107 was outstanding, significantly out–yielding all other varieties tried on cane and sugar. B.54277 also gave good cane and sugar yields in this trial.

At Boarded Hall, on the valley soils, B.54277 gave the heaviest yield of cane, but was beaten on sugar by B.54142.

In the trials in the high rainfall areas, it would appear that B.54142 was the best of this set as plant cane. It has a good juice, and is known to be a good ratooner. B.54277 is out–classed in this rainfall category, in addition to its poor germination, it arrows freely in this category. B.52107 performed well in the trial in which it was included.

(ii) First Ratoons:

One trial grown on the Bulkeley Valley soils was reaped in 1962, and the results are given in Table IX.

In this trial, the plant cane crop was severely damaged by rats, and the yields do not present a true picture of the relative merits of the various varieties. The rats were well controlled in the ratoon crop and there was little evidence of damage by these pests. B.52107 gave the heaviest yield of ratoon cane and sugar. It was followed by B.54142 and B.45151 on cane, and B.45151, B.5480 and B.54142 on sugar. However, none of the differences between the mean yields of any of these varieties was significant. B.52107 has already been recommended for commercial cultivation on deep soils in the high rainfall areas, and it can now be recommended on the Group IV soils of the Bulkeley Valley as well. The individual canes are very thick and, for this reason, rats must be controlled if the variety is to be cultivated successfully. B.54142 would also appear to be a useful variety on the valley soils, but must be tested further before any definite recommendations can be made.

Research Work

Seedling Selection:

Six families of seedlings were selected in May 1960, for an experiment comparing singles with bunches, and also comparing seedlings showing differing vigour at the pot stage. This is a combined attack on the questions studied separately earlier (1958—59 Report p.23; 1959—60 Report pp.23, 24; 1960—61 Report p.29).

Each family was represented in pots as singles and as bunches of five. The mortality of seedlings in bunches was generally rather high, so that 5 classes of bunch could be identified when they were ready to be planted in the field, with 1 to 5 seedlings surviving. Singles were grouped into five classes as shown under Table X: those attacked by moth borer were forced to tiller (or die), so that most of them contained at least 3 shoots, largely for non-genetical reasons. Classes were not randomised in the nursery. Table X shows that singles with 4 to 7 shoots were most frequent, while most bunches had 2 or 3 of the original five potted, living at this stage.

In October, 1960, selections were made on the usual basis in the nursery, and single stools of each planted in the first year trial. The selections from each class were identified but not randomised. Selection among singles was nearly constant (28 — 33%) and among whole bunches also constant (34 — 36%). If survival at this age was similar or even half that earlier in the season, this means that seedlings crowded in a bunch by high survival (class F) stood only $\frac{1}{4}$ to $\frac{1}{2}$ the chance of a single (class Y) of being selected. Class Y was slightly better than classes A to X in all families, suggesting some small advantage from "selection" which operated in killing the four other seedlings potted.

In March 1961, a portion of the original nursery was burnt, so that identification of individual seedlings in bunches was impossible. All stools of each class were reaped as a plot and the average weights and cane numbers are shown in Table X. Only in class D is there a higher-than-average cane production corresponding to high tillering in pots. However, weight per cane (thickness in this case) was very poor.

In February 1962, both the ratoons of the original nursery and the plant canes of the samples selected for first year trial were reaped and recorded stool-by-stool. Because of the fire and drought many seedlings of all families failed to ratoon and one was, in fact, excluded from the experiment at this stage. The distribution curves for weights of different classes (Table XI) shows no marked differences. The most marked feature is the sharp limitation of growth of the ratoons, with approaching half the stools weighing under 5 lb. The long tail of the first year trial weight distribution extending up into the 70 — 80 lb. class reflects largely environment and competition effects. The conditions for the nursery ratoons were very poor indeed, so that the extreme skewness is unlikely to be reflecting ratooning ability; under such conditions where few seedlings have a reasonable chance for growth the positive tail may equally be environmental, and the selection of doubtful efficiency. From the inspections of both plots independent selections on the basis of appearance and brix were made at the rates shown in Table X. Variation in brix was not important, so that family differences in quality did not

bias the selection rate. Such differences as exist in selection rate indicate no obvious correlation with pot observations, except possibly class Y. However, performance in replicated plots will be a better indicator of differences.

It is also not known how many of the selections by the two systems are identical. If they are different, information on the value of nursery ratoon selection will have been collected, albiet from an unduly poor field, as is being done in British Guiana and at Central Romana on samples of these and other families.

TABLE X

SELECTION EXPERIMENT IN B.62′ SERIES

UNWEIGHTED AVERAGES OF SIX FAMILIES SELECTED AS PLANT CANES IN THE NURSERY AND FIRST YEAR TRIAL, AND AS RATOONS OF THE NURSERY.

TYPE	SINGLES					BUNCHES				
	A	B	C	D #	X	E	F	G	H	Y
Total planted in nursery ...	337	387	961	260	577	35	124	457	645	288
% occurence at pot stage ...	20.1	25.1	48.5	6.3	—	3.2	9.2	30.1	40.5	17.0
% Selected for first year trial										
per bunch planted	29	33	28	few	29	few	35	36	34	35
per seedling	29	33	28	few	29	few	9	12	17	35
Plant Cane Nursery weight per stool (lb.)	5.3	5.4	5.6	6.4	5.6	5.6	5.5	5.7	5.7	5.8
Cane No. per Stool ...	4.3	4.4	4.4	6.8	4.3	5.7	5.3	5.1	5.0	4.6
% per stool of nursery taken for further trial (Feb. '62):										
Via first year trial	4.2	4.0	4.6	0.0	3.4	5.3	10.0	5.9	3.8	2.7
* from nursery ratoons (1)	5.5	2.1	3.1	0.0	2.1	0.0	2.5	2.4	2.6	6.2
* from nursery ratoons (2) ...	2.8	1.4	1.7	0.0	1.2	0.0	1.1	1.4	1.4	3.4

Almost all from one family.

* From only four families.

(1) percentage of seedlings surviving as ratoons.
(2) percentage of seedling originally planted.

Key to types

A: single shoot in pot
B: single seedling 2—3 shoots in pot
C: „ „ 4—7 „ „ „
D: „ „ 8 or more shoots in pot
X: „ „ Damaged by moth-borer

E: bunches, 5 seedlings surviving at planting of nursery
F: „ 4 „ „ „ „ „ „
G: „ 3 „ „ „ „ „ „
H: „ 2 „ „ „ „ „ „
Y: „ 1 „ „ „ „ „ „

TABLE XI

COMPARISONS OF WEIGHT DISTRIBUTIONS IN NURSERY RATOONS AND FIRST YEAR TRIAL SAMPLES OF FIVE FAMILIES IN THE B.62′ SERIES

(UNWEIGHTED AVERAGES)

TYPE		A	B	C	X	G	H	Y
NURSERY RATOON WEIGHT DISTRIBUTION — PERCENTAGE OF SEEDLINGS WEIGHED								
(lb.)	0 — 5	48	45	44	39	47	55	43
	6 — 10	22	33	31	41	31	28	29
	11 — 15	19	13	14	12	13	10	15
	16 — 20	6	4	5	5	2	7	10
	21 — 25	1	2	3	3	4	1	1
	26 — 30	2	1	2	1	1	1	1
	31 — 35	0	0	2	—	0	—	—
	36 — 40	2	1	—	—	—	—	—
	41 — 45	—	1	—	—	—	—	—
	46 — 50	—	—	—	—	1	—	—
FIRST YEAR TRIAL WEIGHT DISTRIBUTION — PERCENTAGE OF STOOLS WEIGHED								
(lb.)	0 — 5	2	—	1	—	6	—	—
	6 — 10	2	1	1	5	4	1	4
	11 — 15	6	7	6	1	9	6	5
	16 — 20	8	11	8	6	9	10	4
	21 — 25	8	10	11	15	12	13	9
	26 — 30	11	11	11	19	7	13	1
	31 — 35	20	17	12	11	12	14	26
	36 — 40	12	8	13	12	14	18	12
	41 — 45	3	9	8	10	12	11	11
	46 — 50	19	3	11	4	7	8	4
	51 — 55	7	9	9	3	4	2	4
	56 — 60	1	3	3	9	2	3	1
	61 — 65	2	4	4	1	1	1	—
	66 — 70	—	2	1	1	1	—	—
	71 — 75	1	—	—	—	2	—	—
	76 — 80	—	1	1	1	—	—	1
	81 — 85	—	1	—	1	—	—	2

Varietal Trends in Contributing Territories

Jamaica:

The tendency for a gradual increase in the proportion of B.4362 was continued. This variety has found favour in all districts, and is a valuable general purpose cane which is planted to a larger acreage than any other one. B.41227, which was the major variety for several years, now takes second place.

Variety per cent acreage figures for the crops of 1961 and 1962 are shown below:—

	1961	1962
B.4362	34	37
B.41227	35	33
B.42231	11	11
B.37172	4	4
Co.331	2	2
B.3439	2	1
B.34104	1	1

British Guiana:

Here the only changes of significance are an appreciable increase in the area of B.41227 reaped: this variety represents almost exactly half the reaped area now. The gradual decrease in acreage of B.37161 was continued. The minor varieties all decreased slightly in proportion except for limited plantings of a Demerara seedling, D. 141/46, as shown in the following table of variety per cent acreage figures for 1961 and 1962—:

	1961	1962
B.41227	45.3	49.9
B.37161	35.1	31.2
B.47258	6.9	5.5
B.47225	3.5	3.2
D.141/46	—	2.0
Pindar	1.6	1.4
B.4362	1.4	1.3

Trinidad:

Although B.41227 is by far the most important variety in the overall acreages reaped, there has been a significant increase in the porportion of the newer variety B.49119, which is of importance particularly on the southern estates. The general trend is shown by figures for per cent acreages reaped in 1961 and 1963:—

	1961	1963
B.41227	43.6	58.4
B.37172	15.5	9.2
B.49119	2.6	8.5
B.3337	10.6	6.2
B.37161	9.3	4.7
B.4362	—	3.9

Barbados:

The figures for the 1963 crop show a well-balanced variety picture, with the three major varieties of approximately similar acreage. Of these, B.49119 has continued to increase at the expense of the other two. The only other notable trends are a further decrease in B.41211 and the appearance of the new seedling B.54142, which is likely to increase in popularity in all except the dry areas. The figures for the 1962 and 1963 crops are:—

	1962	1963
B.49119	25.8	29.4
B.4744	28.0	27.3
B.45151	22.1	21.1
B.41211	17.3	12.3
B.54142	—	2.5
B.37161	1.8	1.1

Antigua:

Another large increase in the proportion of B.49119 brings this variety almost to the point of prominence enjoyed by B.4098 throughout the 50's. The figures for 1961 and 1962 were:—

	1961	1962
B.49119	55.2	62.5
B.4098	21.8	19.8
B.4744	6.1	6.6

St. Kitts:

Figures more recent than those published in the last year's report were not available. Per cent acreage figures for the 1960 and 1961 crops are repeated here to complete the record:—

	1960	1961
B.41211	51.4	49.8
B.37161	18.2	13.0
B.45151	8.7	10.6
B.47419	5.4	8.2
B.49119	4.3	7.4

Distribution of Varieties to Contributing and other Countries

Jamaica: ... ... One cutting of each of the varieties of the B.61' series with the exception of B.6102, 03, 04, 05, 06, 07, 15, 30, 140, 141, 142, 143, 230, 231, 285, 286, 287, 288, 289, 312, 313, 358, 359 and 360, which were selected for breeding only.

British Guiana: ... As for Jamaica, but with the addition of B.52313.

La Romana (Dominican Republic): As for Jamaica, but with the addition of B.37172, B.47258, Co. 678, Tukuyu No. 2 and Tabongo.

Trinidad, Antigua and St. Kitts: ... B.5923, 28, 44, 69, 70, 76, 92, 104, 117, 136, 137, 159, 162, 176, 189, 215, 233, 241, 243, and 248. In addition, 28NG.13 was sent to Trinidad.

Guadeloupe: ... B.5928, 76, 92, 104, 117, 137, 159, 162, 176, 189, 233 and 248. The following canes of the B.61' series: 08, 18, 25, 26, 29, 32, 36, 37, 49, 60, 61, 64, 65, 66, 74, 75, 76, 77, 78, 79, 82, 85, 86, 88, 89, 91, 92, 94, 96, 106, 110, 117, 122, 134, 138, 147, 151, 152, 153, 155, 157, 163, 166, 167, 180, 181, 183, 186, 192, 193, 195, 203, 210, 211, 213, 216, 217, 224, 226, 227, 239, 241, 243, 244, 250, 251, 252, 253, 256, 259, 261, 263, 264, 265, 268, 272, 279, 297, 300, 305, 306, 309. 310, 311, 319, 320, 323, 330, 337, 339, 340, 343, 344, 345, 346, 348, 353, and 355.

Martinique: ... B.51414, 415, B.5923, 28, 44, 69, 70, 76, 92, 104, 117, 136, 137, 159, 162, 176, 189, 215, 233, 241, 243, and 248. The following canes of the B.61' series: 08, 18, 25, 32, 64, 74, 76, 77, 78, 85, 88, 89, 92, 94, 98, 110, 138, 151, 152, 163, 166, 180, 192, 203, 211, 217, 224, 227, 239, 241, 252, 261, 265, 272, 279, 297, 300, 306 309, 310, 224, 227, 239, 241, 252, 261, 265, 272, 279, 297, 300, 306, 309, 310, 311, 319, 323, 331, 337, 339, 340 344, 345, and 348.

British Honduras: B.3439, B.52107, B.54142, B.5650 B.5736, B.5744, B.5789, B.57150.

Costa Rica: ... B.52389, B.54163, B.55227, B.55228.

Honduras Republic: B.41227, B.3439, B.49119, B.52107, B.4098, B.37161, B.34104. B.46364, B.47258, B.50377, B.4738.

Panama: ... ... B.55227, B.55228, B.54163, B.50135, B.52321.

Congo Republic: ... B.34104, B.41211, B.41227, B.4362, B.47225, B.47258, B.49119, B.50155, B.50210.

In addition to the above, the following shipments of "fuzz" were made:—

Jamaica: ... ... "Fuzz" from 166 crosses.

British Guiana: ... "Fuzz" from 198 crosses.

La Romana (Dominican Republic: "Fuzz" from 175 crosses.

APPENDIX 1

SUGAR CANE BREEDING, SEEDLING RAISING AND FIELD NURSERY PLANTING 1961—62 — B.64′ SERIES

Details of Crosses made, their Germinations, Numbers Potted and Numbers Planted in the Field Nursery

(G) — SEEDLINGS FOR BREEDING, PLANTED AT GROVES

GROUP	CROSS	No. Germinated	No. PLANTED IN FIELD NURSERY	
			Singles	Bunches
S. officinarum x S. spontaneum				
2nd Glagah Nobilisation	B.44130 x B.5907	12	(G) 12	—
3rd ,, ,,	B.5401 x B.4604	1,300	600	57
1st Moentai ,,	Ba.11569 x Moentai	2	(G) 1	—
Noble x Glagah x Local	B.51311 x B.3337	100	97	—
	B.51311 x B.4604	1,400	1,194	—
	B.5301 x Self	100	—	50
	B.5490 x Co.270	48	44	—
	B.55250 x B.44131	74	72	—
Noble x Local x Celebes ...	Otaheite x B.49138	29	(G) 26	—
Noble x Glagah x Dacca	Ba.11569 x B.48123	55	51	—
	B.4145 x B.39246	7	(G) 7	—
Noble x Glagah x Local x Dacca	B.4581 x Ebene 1/37	8	—	8
Noble x Glagah x Burma ...	Ba.11569 x C—4—6	69	(G) 61	—
		3,204	2,165	115
S. officinarum x S. barberi				
3rd Barberi Nobilisation ...				
	Co.213 x Sc.12/4	30	(G) 25	—
	Co.213 x Comus	42	(G) 42	—
		72	67	—
S. officinarum x S. spontaneum x S. barberi				
Noble x Glagah x Barberi ...				
	Co 213 x B.39220	179	176	—
	H.32—8560 x B.37193	558	534	—
	H.32—8560 x B.4362	46	45	—
	H.32—8560 x B.4604	112	108	—
	Ba.11569 x B.60218	97	(G) 88	—
	B.35207 x B.44131	14	13	—
	B.47225 x B.47233	8	—	8
	B.48361 x B.41227	60	59	—
	B.49282 x B.41227	6	—	6
	B.53267 x B.41227	38	29	—
	B.5401 x B.5012	148	146	—
	B.5650 x B.51410	13	13	—
	v.3 x u.14222	800	495	15
Noble x Local x Barberi	B.3365 x Co.270	166	156	—
	B.37161 x B.40256	469	430	—
	r.142 x d.211	424	402	—

APPENDIX I — *(Continued)*

Group	Cross	No. Germinated	No. Planted In Field Nursery	
			Singles	Bunches
Noble x Glagah x Local x Barberi	Cadmus x B.3337	113	104	—
	Co.421 x w.11	2,300	234	191
	D.62/43 x B.42231	1,500	522	69
	D.62/43 x B.52298	638	630	—
	F.36—819 x B.50347	30	21	—
	H.32—8560 x B 41211	1,300	1,243	—
	H 32—8560 x B.48392	143	142	—
	H.32—8560 x B.50166	80	79	—
	H.32—8560 x B.5121	40	39	—
	M.134/32 x B.50347	80	74	—
	Pindar x t.1	11	—	11
	PR.1000 x B.4744	18	17	—
	PR.1000 x B.5012	135	124	—
	PR.1000 x B.5235	595	558	—
	PR.1000 x B.54262	136	116	—
	Q.70 x B.50374	500	390	—
	B.3354 x B.49119	627	571	—
	B.3439 x B.50347	170	151	—
	B.40105 x B.4604	35	23	—
	B.4381 x CP.28/11	44	(G) 39	—
	B.4381 x B.3337	335	317	—
	B.44130 x 54281	13	(G) 12	—
	B.45137 x Co.775	1,500	513	76
	B.45137 x B.59239	38	33	—
	B.4604 x t.2	12	—	12
	B.47225 x B.4098	9	—	9
	B.47225 x B.47419	235	218	—
	B.47225 x B.49119	412	312	—
	B.48330 x Co.775	132	118	—
	B.4906 x B.5121	211	184	—
	B.49282 x Co.678	28	28	—
	B.5011 x B.47233	12	—	12
	B.50215 x NCo.310	1,400	619	32
	B.50215 x B.41227	41	41	—
	B.50215 x B.49119	94	86	—
	B.5142 x B.52107	30	28	—
	B.51116 x B.3337	285	258	—
	B.51129 x B.4744	6	6	—
	B.51129 x B.5736	23	19	—
	B.51131 x B.3337	64	59	—
	B.51311 x B.4738	12	—	12
	B.51418 x Eros	238	228	—
	B.52405 x Eros	46	42	—
	B.5490 x B.34104	762	739	—
	B.5490 x B.4744	330	323	—
	B.5490 x B.49119	218	216	—
	B.5490 x B.5126	305	291	—
	B.5490 x B.5503	172	162	—
	B.55258 x NCo.310	1,200	680	32
	B.55258 x B.40122	311	281	—
	B.55258 x B.47419	180	172	—
	B.55258 x B.49119	140	122	—
	B.55258 x B.52107	231	218	—
	B.5650 x Co.678	60	60	—
	B.5650 x B.5121	15	13	—
	B.57176 x B.57156	86	82	—

APPENDIX I (*Continued*)

Group	Cross	No. Germinated	No. Planted in Field Nursery	
			Singles	Bunches
Noble x Glagah x Local x Barberi	B.58137 x B.5736	559	522	—
	B.58215 x B.49119	1,100	1,100	—
	c.32 x B.49119	115	113	—
	j.51 x d.211	24	21	—
	u.1127 x B.49119	45	34	—
	w.2 x t.221	13	13	—
Noble x Glagah x Local x Celebes x Barberi	F.31—962 x B.46364	880	769	—
	B.45121 x B.46364	973	789	—
	B.48165 x B.4744	18	17	—
	B.4906 x B.50377	283	242	—
	B.50210 x B.40256	1,100	864	22
	B.50210 x B.43337	64	57	—
	B.50210 x B.4738	12	—	12
	B.50210 x B.50340	1,100	789	28
	B.50210 x B.53164	333	320	—
	B.52315 x B.60258	17	16	—
	B.52371 x Co.678	331	291	—
	B.52371 x B.39220	230	190	—
Noble x Glagah x Local x Celebes x Barberi	B.60290 x B.47156	41	37	—
Noble x Local x Dacca x Barberi	B.46103 x B.39246	18	(G) 16	—
Noble x Glagah x Local x Dacca x Celebes x Barberi	B.50210 x B.49224	31	22	—
		28,106	20,473	547
S. officinarum x S. spontaneum x S. sinense				
Noble x Glagah x Sinense ...	B.4145 x B.51143	98	91	—
	B.45220 x B.3337	441	414	—
Noble x Glagah x Local x Sinense	b.442 x d.211	46	43	—
		585	548	—
S. officinarum x S. barberi x S. Sinense				
Noble x Barberi x Sinense ...	Ba.11569 x B.47331	11	9	—
S. officinarum x S. spontaneum x S. barberi x S. sinense				
Noble x Glagah x Barberi x Sinense	H.32—8560 x B.45116	73	73	—
	H.32—8560 x B.51152	40	35	—
	B.37161 x B.51270	82	72	—
	B.39254 x Cl.41—223	19	18	—
	B.45119 x B.52107	28	28	—
	B.45154 x B.5012	54	53	—
Noble x Local x Barberi x Sinense	B.3365 x B.47258	65	57	—
	B.45152 x B.40122	11	11	—

APPENDIX 1 (*Continued*)

Group	Cross	No. Germinated	No. Planted In Field Nursery	
			Singles	Bunches
Noble x Glagah x Local x Barberi x Sinense	Co.360 x B.54277	18	17	—
	H.44—2364 x B.54142	2,000	983	95
	PR.1000 x B.54142	1,900	1,049	81
	B.37161 x B.54142	827	694	—
	B.37161 x B.54277	388	368	—
	B.4214 x B.54142	1,000	902	—
	B.44111 x B.37193	1,000	784	—
	B.44341 x B.3337	119	102	—
	B.44341 x B.4738	195	188	—
	B.44341 x B.50347	10	—	10
	B.45137 x H.32—1063	14	—	14
	B.45137 x B.50340	403	386	—
	B.45119 x B.4098	36	32	—
	B.45220 x B.54277	1,000	554	31
	B.47329 x B.3337	160	148	—
	B.47386 x B.54142	388	314	—
	B.48330 x B.54142	13	12	—
	B.5011 x B.47258	46	35	—
	B.5055 x B.47258	93	88	—
	B.50146 x B.3337	12	—	12
	B.51311 x B.47331	10	—	10
	B.52321 x B.54142	45	43	—
	B.5319 x t.3, t.4, t.5	13	—	13
	B.53355 x B.52107	3	—	3
	B.5401 x B.54142	324	316	—
	B.5599 x NCo.310	361	300	—
	B.5599 x B.52107	10	9	—
Noble x Glagah x Local x Barberi x Sinense	B.5650 x B.47258	4	3	—
	B.57109 x B.54262	21	14	—
	B.57150 x B.54142	94	84	—
	w.2 x B.45151	571	501	—
Noble x Glagah x Dacca x Barberi x Sinense	B.45119 x B.49224	8	8	—
Noble x Glagah x Local x Celebes x Barberi x Sinense	B.44341 x B.43337	14	14	—
	B.45119 x B.50377	13	13	—
	B.45119 x B.53164	20	3	—
	B.47179 x B.47258	10	7	—
	B.50146 x B.60258	18	15	—
	B.5985 x B.4995	78	71	—
		11,611	8,404	269
S. officinarum x S. robustum				
1st Nobilisation Robustum ...	Ba.11569 x 51NG.55	1,500	(G) 377	96
S. officinarum x S. spontaneum x S. robustum				
Noble x Glagah x Robustum ...	B.58215 x B.6201	138	(G) 121	—
Noble x Glagah x Local x Robustum	B.4906 x B.4524	8	7	—
	B.4096 x B.44234	8	—	8
		154	128	8

APPENDIX I (*Continued*)

Group	Cross	No. Germinated	No. Planted In Field Nursery	
			Singles	Bunches
S. officinarum x S. spontaneum x S. barberi x S. robustum				
Noble x Glagah x Local x Barberi x Robustum	F.31—962 x B.44234	21	12	—
	H.32—8560 x B.51242	1,132	1,084	—
	B.5037 x 32MQ.579	184	171	—
	B.45121 x B.51242	421	383	—
	B.49388 x Eros	220	204	—
	B.49388 x H.44—3098	40	33	—
	B.49388 x NCo.310	134	117	—
	B.49388 x B.42231	162	140	—
Noble x Local x Glagah x Celebes x Barberi x Robustum ...	B.4523 x B.50377	362	331	—
		2,676	2,475	—
S. officinarum x S. spontaneum x S. barberi x S. robustum x S. sinense				
Noble x Glagah x Local x Barberi x Robustum	B.49388 x B.47258	80	56	—
S. officinarum x S. spontaneum x S. sinense x S. robustum				
Noble x Glagah x Sinense x Robustum	B.45220 x B.51242	720	660	—
Noble x Glagah x Celebes x Sinense x Robustum	B.45154 x B.57100	69	64	—
		789	724	—
S. officinarum x S. spontaneum x S. barberi x S. sinense x S.robustum				
Noble x Glagah x Local x Barberi x Sinense x Robustum ...	B.44111 x B.4454	223	215	—
	TOTALS	49,011	35,641	1,035
	Selfs and Inbreds for Research Programme			
S. officinarum x S. spontaneum				
Noble x Glagah x Local	d.13 x Self	176	162	—
	d.221 x Self	147	121	—
	d.24512 x Self	12	11	—
	z.1 x Self	41	41	—
		376	335	—

APPENDIX I—(*Concluded*)

Group	Cross		No. Germinated	No. Planted In Field Nursery	
				Singles	Bunches
S. officinarum x S. barberi					
3rd Barberi Nobilisation	u.1331	x Self	800	309	34
S. officinarum x S. barberi x S. spontaneum					
Noble x Glagah x Barberi ...	j.37	x Self	1,000	801	28
Noble x Local x Barberi	l.12	x Self	500	240	21
	r.141	x Self	302	298	—
	r.33211	x Self	9	2	—
Noble x Local x Glagah x Barberi	B.4668	x Self	8	—	8
	o.1	x Self	2,000	267	139
	w.11	x Self	33	29	—
			3,852	1,637	196
S. officinarum x S. spontaneum x S. sinense					
Noble x Glagah x Sinense ...	b.126	x Self	504	465	—
	Sub–Totals		5,532	2,746	230
	Grand–Totals		54,543	38,387	1,265

APPENDIX II.

NURSERY SELECTION AND PLANTING OF THE FIRST YEAR SEEDLING TRIAL B.63′ SERIES

List of Crosses and Number of Seedlings of each Planted in the Field Nursery (May 1961) and in the First Year Seedling Trial October (1961)

Group	Cross	No. Planted in Field Nursery		No. Planted in First Year Seedling Trial
		Singles	Bunches	
S. officinarum x S. spontaneum				
4th Glagah Nobilisation	B.3439 x B.39220	37	—	10
Noble x Glagah x Local	B.3439 x Pindar	95	—	40
	B.55258 x B.5126	310 (678)*	25	87 expt.*
	B.5650 x d.231	8	—	5
Noble x Glagah x Celebes	B.3439 x B.43337	319	—	63
	B.42304 x B.46364	455	2	99
	B.46364 x Self	10	—	—
Noble x Glagah x Local x Celebes	B.55258 x B.43337	38	—	12
		1,272	27	316
S. officinarum x. S. spontaneum x S. barberi				
Noble x Glagah x Barberi	B.52107 x Self	266	16	58
	H.32—8560 x a.131	13	—	6
	H.32—8560 x B.41227	173	—	78
	H.32—8560 x B.4327	544	—	168
	H.32—8560 x B.47233	328	—	133
	POJ.213 x B.3337	474	31	38
Noble x Local x Glagah x Barberi	B.3172 x B.34104	197	—	66
	B.3172 x B.47314	18	—	6
	B.3172 x B.49119	75	—	21
	B.3365 x B.42231	294	—	57
	B.3365 x B.4738	35	—	17
	B.3365 x B.4744	91	—	19
	B.3365 x B.54163	18	—	10
	B.3365 x NCo.310	127	—	32
	B.3439 x B.45237	302	14	75
	B.3439 x B.49257	22	—	12
	B.3439 x B.5480	47	—	23
	B.3439 x c.4144	10	—	3
	B.37161 x B.49119	479	10	104
	B.37161 x c.4125	43	—	23
	B.37161 x p.12	88	—	39
	B.37161 x t.15	319	—	72
	B.37172 x B.5411	25	—	8
	B.4096 x B.49119	290	25	69
	B.4145 x B.4744	70	—	23
	B.42231 x B.49119	633	21	146
	B.42304 x B.4995	383	—	66
	B.42304 x B.49119	404	9	77
	B.4362 x B.41211	89	—	14
	B.43253 x B.49119	381	—	42
	B.45121 x B.4098	391 (245)*	—	81 expt.*
	B.45137 x B.52107	257	—	49
	B.45137 x NCo.330	—	1	—
	B.45137 x Co.270	80	—	10

APPENDIX II.—*Continued*

Group	Cross		No. Planted in Field Nursery		No. Planted in First Year Seedling Trial
			Singles	Bunches	
Noble x Local x Glagah x Barberi	B.4733	x B.55228	24	—	4
	B.4744	x B.49119	630	28	121
	B.48209	x B.4098	39	—	11
	B.48330	x Co.331	321	9	73
	B.4906	x B.4362	71	—	16
	B.4906	x B.49119	822	33	161
	B.4906	x B.53200	396	—	62
	B.4906	x B.5480	331	16	51
	B.4906	x B.54163	8	—	3
	B.4906	x CP.44—155	119	—	36
	B.4906	x w.1	694	—	187
	B.49257	x B.49119	133	—	35
	B.49257	x Self	32	—	15
	B.5011	x NCo.310	34	—	14
	B.5055	x B.4747	110	—	29
	B.5055	x B.53200	355	7	80
	B.50126	x B.41227	115	—	52
	B.51116	x B.51134	163	—	13
	B.51131	x Pindar	16	—	10
	B.52184	x B.34104	98	—	36
	B.52315	x B.43214	160	—	58
	B.52321	x B.4744	11	—	8
	B.52389	x B.41227	499	—	60
	B.52389	x Eros	82	—	18
	B.53348	x C1.41—223	16	—	5
	B.5490	x B.5916	7	—	3
	B.55250	x NCo.330	324	—	52
	B.55258	x Eros	54	—	40
	c.32	x B.41227	144	—	52
	c.32	x Co.991	84	—	34
	C1.41—223	x B.49119	673	13	101
	Co.290	x B.49119	593	51	74
	Co.360	x B.4098	270	—	86
	Co.360	x B.47314	99	—	10
	Co.360	x B.57156	8	—	6
	Co.421	x B.54163	441	15	33
	Co.603	x B.34104	403	13	80
	Co.603	x B.41227	8	—	6
	D.62/43	x Pindar	—	7	2
	Eros	x B.49119	263	—	70
	F.36—819	x B.3337	200	11	48
	F.36—819	x B.34104	30	—	7
	H.32—8560	x B.42231	323	—	96
	H.32—8560	x B.51134	506	25	178
	PR.1000	x B.42231	557	—	53
	PR.1000	x B.5736	363	5	46
	Trojan	x B.49119	215 (746)*	33	82 expt.*
Noble x Glagah x Celebes x Barberi	H.32—8560	x B.49198	28	—	9
Noble x Local x Celebes x Barberi	B.3365	x B.47177	378	—	49
Noble x Local x Glagah x Celebes x Barberi	B.42304	x B.50377	377	35	95
	B.45225	x B.50377	297	13	37
	B.46364	x B.49119	410 (245)*	—	51 expt.*
	B.5082	x Pindar	13	—	6
	B.50210	x B.4744	155	—	40
	B.50210	x B.47314	630	—	82
	B.52371	x B.49119	775	—	111
	B.53164	x B.49119	769	14	123

APPENDIX II.—*Continued*

Group	Cross		No. Planted in Field Nursery		No. Planted in First Year Seedling Trial
			Singles	Bunches	
Noble x Local x Glagah x Celebes x Barberi	B.53165	x B.34104	202	—	68
	B.53165	x B.4747	410	—	84
	B.53165	x B.49119	476	—	54
	B.55258	x B.47177	171	—	33
	B.55258	x B.50377	582	35	158
	Co.421	x B.47151	858	—	40
	PR.1000	x B.46364	254	7	61
Noble x Local x Glagah x Dacca x Barberi	B.4581	x B.34104	15	—	11
Noble x Philipines x Barberi	B.3365	x CP.36—154	439	—	55
Noble x Local x Glagah x Philippines x Barberi	B.5037	x CP.36—154	51	—	26
			25,100	497	5,155
S. officinarum x S. spontaneum x S. sinense					
Noble x Celebes x Sinense	B.47183	x B.H.10(12)	19	—	7
Noble x Glagah x Celebes x Sinense	B.45154	x B.43337	198	—	51
			217	—	58
S. officinarum x S. spontaneum x S. barberi x S. sinense					
Noble x Local x Barberi x sinense	B.37161	x B.45151	135	—	22
	B.37161	x B.47258	295	—	74
	B.42279	x B.45151	186	20	34
	n.2	x B.47258	10	—	5
Noble x Glagah x Barberi x Sinense	B.45119	x B.4864	62	—	26
Noble x Glagah x Celebes x Barberi x Sinense	B.45119	x B.46364	390 (130)*	15	52 expt.*
Noble x Local x Glagah x Celebes x Barberi x Sinense	B.52371	x B.47258	423	—	157
Noble x Local x Glagah x Barberi x Sinense	B.37161	x B.54142	512	—	101
	B.4145	x B.47258	547	—	221
	B.4214	x B.54142	28	—	8
	B.45119	x B.49119	325	—	39
	B.45119	x B.5480	20	—	7
	B.45152	x Pindar	7	—	4
	B.4733	x B.54142	84	—	15
	B.47179	x B.45151	81	—	6
	B.48330	x H.32—1063	96	—	30
	B.4906	x B.45151	397	12	59
	B.5061	x B.5745	65	—	11
	B.52222	x B.47258	628	5	206
	B.53348	x B.47258	331	28	88
	B.5401	x B.5744	42	—	12
	B.5791	x B.5745	10	—	5
	Co.360	x B.45151	285	—	45
	D.62/43	x B.45151	632	—	119
	F.36—819	x B.47258	116	—	32
	H.32.8560	x B.47258	340	—	130
	PR.1000	x B.54142	121	—	22
			6,168	80	1,530

APPENDIX II.—*Continued*

Group	Cross	No. Planted in Field Nursery		No. Planted in First Year Seedling Trial
		Singles	Bunches	
S. officinarum x S. spontaneum x S. robustum				
Noble x Glagah x Robustum	B.48361 x g.3322	29	—	14
Noble x Glagah x Local x Robustum	B.55250 x 32MQ.579	308	—	37
		337	—	51
S. officinarum x S. spontaneum x S. barberi x S. robustum				
Noble x Glagah x Barberi x Robustum	H.32—8560 x 32MQ.579	27	—	5
	B.3439 x CP.43—64	35	—	16
	B.49170 x Eros	50	—	14
Noble x Glagah x Local x Barberi x Robustum	B.42279 x B.51242	22	—	12
	B.4455 x NCo.310	41	—	13
	B.44233 x B.49119	—	135	30
	B.49170 x B.54163	12	—	5
	B.49388 x B.42231	238	—	53
		425	135	148
S. officinarum x S. spontaneum x S. barberi x S. sinense x S. robustum				
Noble x Local x Barberi x Robustum x Sinense	B.53179 x B.47258	12	—	3
Noble x Glagah x Local x Barberi x Robustum x Sinense	B.44233 x B.45151	—	298	42
	B.48357 x B.45151	111	—	27
		123	298	72
Open Pollinated	B.46364	—	60	40
	b.431	—	13	12
	B.47258	—	6	6
	B.3337	—	17	12
	B.39254	—	7	3
		—	103	73
	TOTALS	33,644	1,140	7,403

APPENDIX II.—*Continued*

Group	Cross		No. Planted in Field Nursery		No. Planted in First Year Seedling Trial
			Singles	Bunches	
	Selfs and Inbreds for Research Programme				
S. officinarum x S. barberi					
3rd Barberi Nobilisation	u.15	x Self	255	28	6
	u.1422	x Self	62	—	—
			317	28	6
S. officinarum x S. spontaneum x S. barberi					
Noble x Glagah x Barberi	a.131	x Self	10	—	—
	j.17	x Self	192	14	9
	j.37	x Self	312	56	5
Noble x Local x Barberi	r.143	x Self	187	—	—
Noble x Local x Glagah x Barberi	B.54281	x Self	145	3	41
	c.111	x Self	101	—	—
	c.331	x Self	23	—	—
	c.4144	x Self	4	—	—
	w.1	x Self	105	—	—
	x.1	x Self	197	56	9
			1,276	129	64
S. officinarum x S. spontaneum x S. sinense					
Noble x Glagah x Sinense	b.129	x Self	180	47	10
	b.22272	x Self	124	—	—
			304	47	10
	SUB–TOTALS		1,897	204	80
	GRAND TOTALS		35,541	1,344	7,483

*These seedlings were used in a separate experiment.

APPENDIX III

B.62′ SERIES — SELECTION DETAILS

Group	Cross	First Year Trial			Selected direct from Nursery Ratoons
		No. Reaped	Final Selections	%	
S. officinarum					
Noble	Ba.11569 x Ajax	280	4*	1	—
S. officinarum x S. spontaneum					
2nd Dacca Nobilisation	Otaheite x B.39250	7	1*	14	—
2nd Glagah „ ...	Ba.11569 x B.44131	2	0	0	—
	B.44130 x Comus	6	1*	17	—
	B.44132 x Comus	6	0	0	—
3rd Glagah „ ...	B.3439 x Eros	187	7	4	—
4th Glagah „ ...	Eros x Self	51	2*	4	—
		259	11	4	—
S. officinarum x S. sinense					
1st Sinense Nobilisation ...	Merthi x B.3915	2	0	0	—
S. officinarum x S. robustum ...					—
1st Robustum Nobilisation ...	Ba.11569 x 51NG.63	40	2*	5	—
S. officinarum x S. spontaneum ...					
Noble x Local x Glagah ...	Co.421 x Self	15	1*	7	—
	Trojan x Pindar	21	0	0	—
	B.3439 x Pindar	21	1	5	—
	B.51311 x Co.270	5	0	0	—
	B.51355 x Polycross	53	4	8	—
	B.52298 x Polycross	25	2	8	—
	B.53200 x Polycross	10	1	10	—
Noble x Local x Glagah x Celebes	Ba.11569 x B.48394	4	0	0	—
		154	9	6	—
S. officinarum x S. spontaneum x S. barberi					
Noble x Local x Barberi ...	Trojan x Co.290	68	4	6	—
	B.3365 x CP.44—101	19	0	0	—
Noble x Glagah x Barberi ...	H.32—8560 x Eros	226	25	11	10
	H.32—8560 x B.4864	161	7	4	6
	Ba.11569 x j.31	1	0	0	—
	Ba.11569 x j.35	14	2	14	—
	B.3439 x u.1331	42	3	7	—
	B.37161 x CP.29—116	10	0	0	—
	B.37161 x j.3	32	0	0	—
Noble x Local x Glagah x Barberi	Co.421 x CP.44—101	15	1	7	—
	Co.421 x B.5411	168	11	7	6
	Co.421 x B.5480	29	1	3	—
	Co.421 x B.54163	116	1	1	—
	Co.421 x c.345	89	3	3	—
	D.62/43 x NCo.310	52	1	2	—
	D.62/43 x B.41227	21	1	24	—
	H.32—8560 x Co.991	35	6	17	—
	H.32—8560 x B.42231	5	0	0	—

APPENDIX III (*Continued*)

Group	Cross	First Year Trial			Selected direct from Nursery Ratoons
		No. Reaped	Final Selections	%	
Noble x Local x Glagah x Barberi	H.32—8560 x B.4738	10	1	10	—
	H.32—8560 x B.4744	20	2	10	—
	H.32—8560 x B.52298	107	9	8	—
	H.32—8560 x B.5301	4	0	0	—
	PR.1000 x B.41227	15	0	0	—
	PR.1000 x B.41276	6	0	0	—
	PR.1000 x B.49257	5	0	0	—
	PR.1000 x c.4144	64	0	0	—
	Trojan x B.41227	63	5	8	—
	Trojan x B.49119	34	2	6	—
	Ba.11569 x NCo.330	4	1	25	—
	B.3365 x Co.775	24	0	0	—
	B.3365 x NCo.310	9	0	0	9
	B.3365 x B.42231	6	1	17	—
	B.3365 x B.49119	20	0	0	—
	B.3439 x NCo.310	169	24	14	—
	B.3439 x Q.50	61	5	8	—
	B.37161 x B.53200	23	3	13	—
	B.37161 x B.54235	24	3	13	—
	B.37161 x c.4122	4	0	0	—
	B.4092 x B.51134	20	2	10	—
	B.40105 x B.49119	73	4	5	—
	B.4145 x NCo.310	11	1	9	—
	B.4145 x B.4744	18	2	11	—
	B.41211 x B.41227	12	3	25	—
	B.4214 x B.4098	23	1	4	—
	B.42231 x Self	7	1	14	—
	B.42279 x B.49119	14	2	14	—
	B.45137 x B.51355	13	1	8	—
	B.4744 x Self	16	0	0	—
	B. 8361 x B.4744	43	6	14	—
	B.4906 x NCo.310	9	0	0	—
	B.5012 x B.4738	50	2	4	—
	B.5028 x Co.290	138	3	2	—
	B.5028 x Pindar	42	1	2	—
	B.50215 x u.1121	62	2	3	—
	B.52315 x B.4098	113	8	7	—
	B.52389 x B.41211	30	1	3	—
	B.52389 x B.41227	7	0	0	—
	B.53267 x B.42231	33	3	9	—
	B.53348 x B.41211	320	22	7	5
	B.53348 x B.49119	17	2	12	—
	B.54243 x Co.331	1	0	0	—
	B.5650 x B.4744	68	6	9	—
	B.56104 x B.42231	29	1	3	—
Noble x Local x Glagah x Celebes x Barberi ...	F.36—819 x B.48177	4	0	0	—
	PR.1000 x B.50377	11	0	0	—
	B.3439 x B.50377	136	8	6	12
	B.4145 x B.50377	6	0	0	—
	B.43283 x B.42231	42	1	2	—
	B.43295 x B.4098	7	0	0	—
	B.43295 x B.47320	18	0	0	—
	B.43295 x B.49119	3	1	33	—
	B.45137 x B.49380	26	2	8	—
	B.50210 x Pindar	67	1	1	—
Noble x Local x Glagah x Tukuyu x Barberi	B.6003 x B.47320	11	2*	18	—
		3,275	211	6	48

APPENDIX III (*Continued*)

Group	Cross	First Year Trial			Selected direct from Nursery Ratoons
		No. Reaped	Final Selections	%	
S. officinarum x S. spontaneum x S. sinense					
Noble x Local x Sinense ...	B.39254 x Co.270	9	1	11	—
S. officinarum x S. barberi x S. Sinense x S. spontaneum					
Noble x Barberi x Sinense x Local	B.3365 x B.45151	77	5	6	—
	B.45152 x B.45151	11	0	0	—
Noble x Glagah x Barberi x Sinense	M.134/32 x B.45116	7	0	0	—
Noble x Celebes x Barberi x Sinense	B.39254 x B.45109	11	0	0	—
Noble x Local x Glagah x Barberi x Sinense	F.36—819 x B.45151	95	2	2	—
	H.32—8560 x B.45151	138	9	7	4
	H.32—8560 x B.54142	27	3	11	—
	PR.1000 x B.51148	200	12	6	9
	B.3439 x B.45151	38	3	8	—
	B.37226 x B.4098	2	0	0	—
	B.39254 x B.42231	28	1	4	—
	B.42304 x B.45151	128	20	16	6
	B.4373 x B.45151	60	6	10	—
	B.44111 x B.4098	186	16	9	4
	B.44341 x B.4098	2	0	0	—
	B.45119 x B.49119	25	1	4	—
	B.45152 x F.31—962	2	0	0	—
	B.45152 x NCo.310	3	2	66	—
	B.45152 x B.4098	57	6	11	—
	B.45152 x B.41211	53	4	7	—
	B.45152 x B.52298	5	0	0	—
	B.45154 x B.45151	100	5	5	9
	B.45220 x B.54163	8	0	0	—
	B.48330 x B.45151	11	0	0	—
	B.5012 x B.45151	26	1	4	—
	B.51243 x NCo.310	6	1	17	—
	B.53267 x B.45151	37	1	3	—
	B.53355 x B.49119	15	0	0	—
	B.56104 x B.45151	44	2	5	—
Noble x Local x Glagah x Celebes x Barberi x Sinense	B.50146 x B.50377	8	0	0	—
	B.50210 x B.45151	13	2	15	—
	B.52371 x B.45151	44	2	5	—
Noble x Local x Celebes x Barberi x Sinense	B.43283 x B.45151	76	7	9	2
	B.35247 x B.45151	74	2	3	—
Noble x Glagah x Celebes x Barberi x Sinense	B.45154 x B.45109	14	0	0	—
Noble x Dacca x Local x Barberi x Sinense	B.47399 x B.5862	5	1	20	—
		1,636	114	7	34

APPENDIX III (*Concluded*)

Group	Cross		First Year Trial			Selected direct from Nursery Ratoons
			No. Reaped	Final Selections	%	
S. officinarum x S. spontaneum x S. robustum						
Noble x Celebes x Robustum ...	Otaheite	x B.47199	31	1*	3	—
	Ba.11569	x B.47157	79	2*	3	—
	Ba.11569	x B.47198	9	1*	11	—
Noble x Local x Glagah x Robustum	Trojan	x B.44226	49	2	4	—
	Trojan	x B.44227	65	3	5	—
			233	9	4	—
S. officinarum x S. barberi x S. robustum						
Noble x Barberi x Robustum	B.3365	x 51NG.63	34	2*	6	—
S. officinarum x S. spontaneum x S. barberi x S. robustum ...						
Noble x Local x Glagah x Barberi x Robustum ...	B.45198	x B.4744	62	1	2	—
	B.53179	x B.49119	17	1	6	—
	B.5652	x B.49119	97	6	6	—
Noble x Local x Glagah x Celebes x Barberi x Robustum	B.50210	x B.44226	9	1	11	—
Noble x Local x Barberi x Robustum	B.46103	x 51NG.63	6	1*	17	—
			191	10	5	—
S. officinarum x S. spontaneum x S. sinense x S. robustum						
Noble x Glagah x Celebes x Sinense x Robustum ...	b.441	x B.57100	72	2	3	—
S. officinarum x S. spontaneum x S. barberi x S. sinense x S. robustum						
Noble x Local x Glagah x Barberi x Sinense x Robustum	B.5651	x B.45151	117	4	3	—
	B.5652	x B.45151	21	1	5	—
			138	5	4	—
		Grand Totals	6,323	380	6	82

* Selections for breeding only.

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